

MISSOURI. Conservationist

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Wonderful Waterfowl

The early November morning was as black as the coat of Bandit, the quivering black Labrador sitting between me and my hunting buddy. The prairie potholes were full of water and attracting migrating waterfowl,

and we were on our way to one of our favorite duck-hunting spots.

The stars were bright in the moonless sky as we arranged our decoy spread. As we knelt in the cattails, dawn's first light eased across the horizon and the fun began. Blue-winged teal were a flash and a blur at first light, followed by whizzing green heads, pintails, and shovelers. Ducks were coming and going in such a fashion that, if the ducks had been planes at an airport, it would have been an air traffic controller's nightmare. The sound of ducks feeding and resting on the pothole was almost deafening.

I do not recall how many ducks were bagged that day, but this time with friends and a good dog in a spectacular setting is one of my great memories of outdoor adventure.

That hunt happened long ago, when I lived and worked in South Dakota, but my excitement is just as strong for waterfowl hunting on the many public and private wetlands in Missouri. Good waterfowl hunting opportunities are no accident — Missourians are committed to conserving their forest, fish, and wildlife resources.

Missourians helped develop the North American Waterfowl Plan, and the Department of Conservation provides technical assistance to private wetland owners. Our citizens and representatives are committed to maintaining wetland habitats here and in the breeding grounds to the north because they recognize that those habitats are key to the success of maintaining waterfowl, shorebirds, and other wetland species on the North American continent. For our landowners, sportsman, and citizens, sustaining Missouri's wetlands is an important part of our state's conservation ethic.

While Missouri has well-managed private and public wetlands, management of these wetlands is not without challenges. It's a new century, and the management of water and water resources is becoming one of the most pressing conservation challenges for the country and our state. Given the drought in



north-central Missouri, the availability of limitless water for wetland management has not been the case. In fact, wetland pumping from the Grand River for Fountain Grove Conservation Area had to be halted for a time so that important aquatic habitats and organisms were not irreparably harmed because of diminishing water flows.

There is a lesson here: We must better understand all the components of the natural system. This will allow us to find balance between competing uses and interests so that future generations can experience all components of Missouri's forest, fish, and wildlife resources.

We are fortunate to have such a variety of flora and fauna arranged on a complex geography of unique habitats. This uniqueness provides almost unlimited opportunity to enjoy the outdoors. Our challenge as conservationists is how to best pass these resources and experiences on to the next generation of Missourians.

Tom Draper, deputy director

FEATURES

10 **Quail Hunting: Getting Started**

by Mark Goodwin

You'll need to invest some thought, effort, and expense — but the results are worth it.

16 **Turtle Roundup at Eagle Bluffs**

by Adriane Podgursky, photographs by David Stonner

Scientists and volunteers brave wet and muck for better all-species management.

22 **Discover Nature**

The Conservation Department wants to help you connect with the people, places, and activities you love.

Cover: Bobwhite quail, by Jim Rathert.
To read about the basics of quail hunting in Missouri, turn to Page 10.

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WHAT IS IT?

Our photographers have been busy exploring the intricacies of the Missouri outdoors. See if you can guess this month's natural wonder. The answer is revealed on Page 7.



FIRST STEPS, BIG STEPS

I extend my thanks and appreciation to Tim Kjellesvik for his thoughtful, well-written, and comprehensive piece titled *First Steps Afield* in the October issue [Page 24]. It was one of the most poignant articles I've seen illustrating the importance of educating and encouraging new adherents to our cherished sport-hunting tradition. Tim's examples and suggestions apply not only to youngsters but to older people just now getting interested in the outdoors.

John Stanard, Poplar Bluff

KEEP IT CLEAN

I enjoyed your article *Backyard Birds* [November; Page 10], and I was glad you noted the importance of cleaning hummingbird feeders to prevent the growth of bacteria. It is also important to clean feeders set out for other birds!

House finches and goldfinches in particular can pick up infections resulting in an eye disease from rubbing against tube feeders. If you have ever seen a bird with this disease, unable to fly accurately or find food, you will appreciate how devastating it is. Keeping feeders clean is part of responsibly enjoying your backyard birds.

Laura Gorman, St. Louis

COVER KUDOS

The cover of the September issue is absolutely fabulous! I don't believe I've seen a more stunning and interesting cover — or crawfish [golden crayfish by Chris Lukhaup]. Way to go! The *Missouri Conservationist* just keeps getting better and better. Thank you for all you do! It's a great publication.

Marian Rein

Publisher, St. Louis Java Journal

ORDER FORM & GUIDE

Your Seedling Order Form was outstanding! [George O. White State Forest Nursery; November; inserted at Page 16] The photos were terrific. Thanks for the beautiful all-Missouri flora identifier. I will keep it always as a reference to what grows in my yards and woods. I will take it on every journey to our parks and forests.

Bob Faenger, Springfield

EAT LIKE A BIRD

As a person with celiac disease on a gluten-free diet, I can sympathize with Pete the pigeon in the September issue's Chmielniak cartoon [Page 4]. Thanks for helping make people (and birds, too) aware that it is important to check if your food is indeed gluten-free.

Jean Lyke

CHATTY CHUCK

Every day I walk the 96 steps down to Stinson Creek on Fulton's Westminster Campus. There are woodchucks burrowing in the tall bank down to the creek and, though they are rather shy, they can be curious. One day when I descended the steps, two chucks were calling to one another — sounding to me like loud, echoing jungle birds. In imitation, I began operatically "WHAHH!"-ing to the chuck at the field house. He was fascinated. He called back while he watched me. We kept this exchange up until I decided to leave and get on with my life — and before someone had me committed.

Sylvia Rummel, Fulton

FROM FACEBOOK

Is there a need for conservation agents? I was thinking of changing my major and becoming an agent.

Brad Ashton



Reader Photo

FROSTED

Christie Fowler of Queen City, Mo., took this photo of ice-covered trees at Archangel Access near Livonia on the Chariton River. "I had set out that day to take photos of the frozen fog," says Fowler. "The trees that day were beautiful, but it didn't last long, as the ice melted pretty quickly." Fowler loves to take pictures of just about anything, but her favorite subjects are wildlife and landscapes. She also enjoys feeding birds and squirrels and hiking nature trails. "It is always exciting to get my copy of the *Conservationist Magazine* because I love finding new places to put on my to-go-to list."

Conservation Department: There is a continuing need for conservation agents, and classes are held to train new agents every other year or so on average. Many applicants apply for the available slots, so competition is high. For more info, click on the "careers" tab at the bottom of our home page at MissouriConservation.org and you'll find some documents specific to conservation agents.



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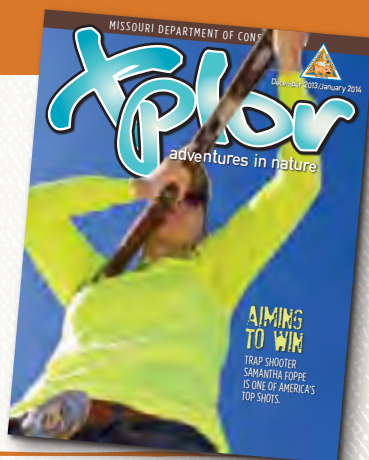
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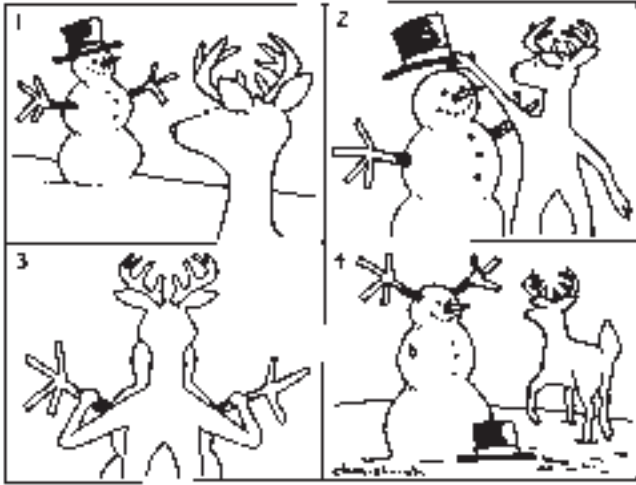
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Agent Notes

Winter Crappie Fishing

LIKE MANY AVID crappie anglers, I enjoy pursuing this delicious game fish during the spring spawning season. As cold weather arrives, many put their boats and poles away, but those that continue to fish can experience some of the best fishing of the year and have their favorite lake to themselves.

The trick to catching crappie in the winter is adjusting your techniques. One major difference is the depth at which they're found. In spring, most people fish the shallows. In winter, crappie are often found in deeper water, sometimes between 20–40 feet deep, but they will move into shallower water during a string of warm days. Another thing to keep in mind is the rate at which you retrieve your lure. In winter, crappie will be far less aggressive and unlikely to chase a fast moving lure. Sometimes they will only bite a lure that is suspended in the water with a bobbers. In addition, in winter crappie tend to congregate in large, dense schools near structures instead of scattering in loose schools over a large area. Casts to one side of a brush pile may yield nothing, while the other side may produce a fish on nearly every cast.

Many kids will be home soon on winter break. Include them in your winter fishing fun. All it takes is the appropriate fishing permit (or exemption), and a little determination to face the cold weather. For more information on local fishing rules and regulations contact your local conservation agent or Department office, or visit mdc.mo.gov/node/3104.

Derek Warnke is the conservation agent in Camden County. If you would like to contact the agent for your county, phone your regional conservation office listed on Page 3.



HUNTING AND FISHING CALENDAR

FISHING	OPEN	CLOSE
Black Bass from Ozark Streams	05/25/13	02/28/14
Nongame Fish Giggling	09/15/13	01/31/14
Paddlefish on the Mississippi River	09/15/13	12/15/13

HUNTING	OPEN	CLOSE
Coyote	05/06/13	03/31/14
Crow	11/01/13	3/03/14
Deer		
Archery	09/15/13 11/27/13	11/15/13 01/15/14
Firearms		
November	11/16/13	11/26/13
Antlerless (open areas only)	11/27/13	12/08/13
Alternative Methods	12/21/13	12/31/13
Late Youth	01/04/14	01/05/14
Furbearers	11/15/13	01/31/14
Groundhog	05/06/13	12/15/13
Pheasant		
North Zone	11/01/13	01/15/14
Southeast Zone	12/01/13	12/12/13
Quail		
Regular	11/01/13	01/15/14
Rabbit	10/01/13	02/15/14
Squirrel	05/25/13	02/15/14
Turkey		
Archery	11/27/13	01/15/14
Waterfowl	see the <i>Waterfowl Hunting Digest</i> or mdc.mo.gov/node/3830	
Wilson's (common) snipe	09/01/13	12/16/13
Woodcock	10/15/13	11/28/13

TRAPPING	OPEN	CLOSE
Beaver and Nutria	11/15/13	03/31/14
Furbearers	11/15/13	01/31/14
Otters and Muskrats	11/15/13	02/20/14

For complete information about seasons, limits, methods, and restrictions, consult the *Wildlife Code* and the current summaries of *Missouri Hunting and Trapping Regulations* and *Missouri Fishing Regulations*, *The Spring Turkey Hunting Regulations and Information*, the *Fall Deer and Turkey Hunting Regulations and Information*, the *Waterfowl Hunting Digest*, and the *Migratory Bird Hunting Digest*. For more information visit mdc.mo.gov/node/130 or permit vendors.

Operation Game Thief

Help put game thieves out of business. If you see a possible violation in progress, call your county conservation agent immediately or dial the toll-free number below:

1-800-392-1111

All information is kept in strict confidence. Desirable information includes names of violators, vehicle description and license number, as well as the violation location.

ASK
THE

Ombudsman



Marcescent leaves

Q. Why do some deciduous trees retain their dead leaves until spring? Doesn't it make the trees more susceptible to wind, snow, and ice damage?

The retention over winter of old, dead leaves is known as marcescence. In Missouri it is common among trees such as pin oaks, shingle oaks, young oaks of other species, and American beech in southeast Missouri. It probably does make trees more subject to weather damage during the winter, but not all plants are supremely well adapted to their current growing conditions. One theory is that marcescent species may have originated at more southern latitudes, eventually spread northward, but are genetically programmed for a later-arriving winter. The early onset of cold temperatures can prompt marcescence in species that don't normally show that characteristic.

Marcescence may provide an advantage as a defense against animals browsing the winter buds, if the browsers are deterred by the presence of dried leaves on the twigs.

Q. Is it legal to sell the fish that I catch in my pond?

It depends on the circumstances. If you purchased the fish to stock your pond and you have documentation of that, the fish are yours to do with as you wish.

If you or any previous owner received fish from the Department in the past for stocking the pond, stocked it with wild-caught fish, or if the pond receives wild fish from a connection with any creek or stream or other public body of water,

then you cannot sell the fish due to the *Wildlife Code of Missouri's* restrictions on the sale of wildlife.

While there are some exceptions, most game and fish taken from the wild may not be sold. For example, there are commercial fishing permits and regulated trapping of some animals also has a commercial aspect. However, commercial markets for animals and animal parts were one of the driving factors in the great decline of wildlife in the late 1800s to early 1900s. Modern conservation began as a reaction against that devastation of wildlife populations. Current regulations are intended to protect fish and game from overharvest in response to market demand.

Q. I recently saw a bald eagle perched near my rural home. Are bald eagles rare in Missouri?

Bald eagles are becoming more common in Missouri. In the winter we typically have thousands of eagles in the state. They are most numerous near rivers, large reservoirs, and wetlands, where they can feed on fish or migrating waterfowl. Most of the migrant birds arrive in December and leave by the following March. During the spring, we have more than 150 nesting pairs of bald eagles in the state. That is great news because for many decades there were no nesting bald eagles here. Young eagles that fledge in Missouri usually return to nest as adults, so we expect to continue to see a gradual increase in the number of bald eagles here year-round.

Ombudsman Tim Smith will respond to your questions, suggestions, or complaints concerning the Conservation Department.
Address: PO Box 180, Jefferson City, 65102-0180
Phone: 573-522-4115, ext. 3848
Email: Ombudsman@mdc.mo.gov



Spotting scopes, refreshments, and amazing wildlife viewing opportunities help everyone enjoy Eagle Days.

Eagle Days Start Dec. 7

Each year, the Conservation Department encourages people to discover nature by attending Eagle Day events around the state. These typically include outdoor viewing of wild eagles and indoor programs with live, captive eagles, plus exhibits, activities, videos, guides with spotting scopes, and refreshments. Following is this year's Eagle Day event schedule.

- **Mound City**, Squaw Creek National Wildlife Refuge, 9 a.m. to 4 p.m. Dec. 7 and 8. For more information call 816-271-3100.
- **Smithville Lake**, Little Platte Park Course Complex, Smithville, 9:30 a.m. to 3:30 p.m. Jan. 4, and 11 a.m. to 3:30 p.m. Jan. 5. For more information call 816-532-0174.

- **St. Louis**, Old Chain of Rock Bridge south of I-270 off Riverview Drive, 9 a.m. until 3 p.m. Jan. 18 and 19. For more information, call 314-877-1309.
- **Springfield Conservation Nature Center**, 9 a.m. until 4 p.m. Jan. 18 and 12:30 until 4:30 p.m. Jan. 19. For more information call 417-888-4237.
- **Clarksville**, Lock & Dam 24 and Apple Shed Theater, 9 a.m. to 4 p.m. Jan. 25 and 10 a.m. until 3 p.m. Jan. 26. For more information call 660-785-2420.
- **Shell City Community Center and Shell-Osage Conservation Area (CA)**, 9 a.m. until 3 p.m. Feb. 8. For more information call 417-876-5226.

Can't make Eagle Days? View eagles in the wild at numerous locations throughout the state including:

- Lake of the Ozarks, Bagnell Dam Access east of Bagnell
- Eagle Bluffs CA, off Route K southwest of Columbia
- Lock & Dam 24, Clarksville, Mississippi River
- Lock & Dam 25, east of Winfield, Mississippi River
- Mingo National Wildlife Refuge (NWR), northwest of Puxico
- Old Chain of Rocks Bridge, St. Louis
- Riverlands Migratory Bird Sanctuary, east of West Alton
- Schell-Osage CA, north of El Dorado Springs
- Squaw Creek NWR, south of Mound City
- Swan Lake NWR, south of Sumner
- Table Rock Lake, southwest of Branson
- Truman Reservoir, west of Warsaw

Dress for the weather and don't forget cameras and binoculars. For an Eagle Days brochure, visit mdc.mo.go.

Fall Turkey, Early Portion Deer Harvest Reports

Hunters checked 5,929 turkeys during the month-long fall firearms turkey season. The fall firearms turkey harvest has been declining since the 1980s, when Missouri's turkey flock was still growing rapidly. Causes of the decline include increased popularity of archery deer

hunting and many other competing autumn outdoor activities.

Meanwhile, hunters checked 600 deer in the Urban Portion of Firearms Deer Season, and hunters age 6 through 15 added another 18,676 to this year's firearms deer harvest during the Early Youth Portion.

The urban-portion harvest was fewer than the average of approximately 1,000 per year since the urban hunt began in 2003. It is consistent with harvests for other years when warm weather prevailed during the urban portion.

The early youth deer harvest was 44 percent larger than the previous 10-year average. Factors contributing to the increase included excellent hunting weather and increasing participation in the youth portion.

Marilynn Bradford Joins Conservation Commission

Gov. Jeremiah "Jay" Nixon has appointed a central Missouri native with lifelong interests in the out-

doors and a proven commitment to public service to a six-year term on the Conservation Commission.

Marilynn J. Bradford, (I), Jefferson City, has a diverse background in government, private business and citizen conservation. Her term on the Conservation Commission will run through June 30, 2019.

Bradford's diverse career includes more than 20 years of public service in state government with the departments of Agriculture and Social Services, working primarily in community and media relations.

While employed by the state, Bradford worked with national media, including the New York Times, USA Today, the Wall Street Journal, the Washington Post, and the Public Broadcasting Service. She worked extensively with state and national foundations developing grant funding for Missouri initiatives

A life member of the Conservation Federation of Missouri, Bradford served on the planning committee for the federation's 2009 Summit on the Future of Missouri Outdoors.



Marilynn Bradford is the newest Conservation Commissioner.

Conservation Department Director Robert L. Ziehm says the agency is certain to benefit from Bradford's diverse experience.



WHAT IS IT?

Black Bear

Ursus americanus

The black bear is the only species of bear found in Missouri. Black bears live mostly south of the Missouri River in heavily wooded areas. In winter they den in a hollow tree, cave, an excavated hollow in the ground, or another shelter. Black bears eat a variety of foods, including berries, nuts, the inner bark of trees, insects, fish, frogs, small rodents, fawns, bird eggs, and many kinds of carrion. Mating is in May or June, but the development of eggs is arrested for 6 or 7 months. The eggs continue development about the time that bears enter hibernation, in October or November. Usually two to three cubs are born in late January or February — sometimes while the mother is still asleep. —*photo by Noppadol Paothong*

(continued from Page 7)

"Her long-time commitment to Missouri, interest in the outdoors and her work with various organizations gives her a firm foundation of

knowledge about conservation issues. We could not be more pleased with her selection to serve on the Conservation Commission."

Give the Gift of Nature This Year

Are you wondering how to find the right gift for everyone on your holiday shopping list without breaking the bank? The Nature Shop online could be the answer.

The 2014 *Natural Events Calendar* has 365 days' worth of visual thrills and insights into natural phenomena from meteor showers to wildlife birthing seasons. At \$7, plus shipping and sales tax, where applicable, it is the bargain of the year.

The Conservation Department's newest book, *The Promise Continues: 75 years of Citizen-Led Conservation in Missouri*, and a companion DVD, chronicle progress made in restoring and preserving Missouri's forests, fish, and wildlife since the agency's creation by a vote of the people in 1936. The handsome, hardbound book sells for \$15, the DVD for \$8, plus shipping and sales tax, where applicable.

Paddlers on your list would love a copy of the recently updated *Paddler's Guide to Missouri*. The \$8 guide has been substantially expanded to include color photos, maps, and minute details about Missouri's most popular float streams, plus dozens of lesser tributaries. In all, the book covers 58 rivers and streams in every corner of the state.

Another great buy is *Cooking Wild in Missouri*, a lavishly illustrated guide to cooking the Show-Me State's bounty of wild game, fish, mushrooms, nuts, and fruits. The 200-page book has recipes ranging from Italian gelato and Korean barbecued venison to classic American dishes. For \$15, this book has something for every cook on your shopping list.

You can see the full selection of books, greeting cards, DVDs, CDs, and more at mdcnature-shop.com. Order online or by calling toll-free 877-521-8632. Many Nature Shop items also are available at conservation nature centers.

At a loss for a gift for the hunter or angler who has everything? Consider a lifetime permit. The Resident Lifetime Small Game Hunting Permit costs as little as \$35 for Missouri hunters 60 or older. The same permit is an amazing bargain at \$275 for Missouri residents 15 and younger. Lifetime Conservation Partner Permits, which include hunting and fishing privileges, start at \$70 for Missouri residents 60 and older.

Lifetime permits are not available over the counter. For information about how to apply for one, visit mdc.mo.gov/8849, call 573-522-4115, ext. 3574, or write to Lifetime Permits, Missouri Department of Conservation, PO Box 180, Jefferson City, MO 65102-0180.

Bradford and her husband are co-owners of Pyramid Home Health Services, which serves more than 3,000 elderly and disabled Missourians. They also co-own a 1,000-acre timber and hunting property in Wayne and Madison counties and a rice farm in Pemiscot County.

Bradford says her interest in conservation began as a child growing up in the "Mayberry-like" setting in Jefferson City.

"To my mother's dismay, I was a tomboy from the get-go," says Bradford. "My dad ran a Western Auto store and my main interests were the cap-guns and BB rifles they sold. I always wanted a Daisy BB gun."

"We had a creek across the street and all the kids in the neighborhood took advantage of catching tadpoles, frogs, turtles, fish, and even a few small snakes. There were woods nearby where we could invent games and let our imaginations run wild.

"That's where I remember the early evening call of the whippoorwills and owls later at night. My family enjoyed fishing and boating and we took many outings on the Osage River and to the Lake of the Ozarks and Bennett Springs."

Her early exposure to Missouri's trout parks was reinforced when her husband introduced her to fly-fishing, one of her favorite pastimes today.

"We have taken fishing trips across the country," says Bradford, "but there is no better fishing than right here in Missouri."

Bradford counts her Great Aunt Fredricka Simonsen among her formative influences.

"She was my role model," says Bradford. "She was a true trailblazing woman. She was Missouri's first woman pharmacist in 1899. Her spirit shaped my beliefs today and my desire to serve the public."

Summing up her commitment, she says, "I am a fourth-generation Missourian and deeply love this state — its beauty and diversity are unmatched. There truly is no better place to live. It is a great honor to be asked to serve as a Conservation Commissioner, and I am proud to join the ranks of so many volunteer conservation leaders who have worked together to preserve our state's natural beauty and environment for future generations."

"Being a grandmother of 4-year-old twins reminds me daily of the important task that is ahead and the significance of this position. I look forward to contributing my energies and efforts



DID YOU KNOW?

Conservation works with you and for you.

for the Missouri Department of Conservation and our children's future."

Bradford replaces Don Johnson, Festus, who served from 2007 through 2013.

The Missouri Conservation Commission controls, manages, restores, conserves and regulates the bird, fish, game, forestry and all wildlife resources of the state, including hatcheries, sanctuaries, refuges, reservations and all other property owned, acquired, or used for such purposes, as well as the acquisition and establishment of those properties.

Grouse Restoration Still Not Feasible

A two-year study strongly indicates that further attempts at restoring ruffed grouse to the river hills of east-central Missouri would be impractical at this time.

The Conservation Department translocated more than 5,000 ruffed grouse from other Midwestern states to suitable habitat mostly in the central Ozarks, north-central, and east-central Missouri between the 1950s and the 1990s. But unlike the wild turkey restoration program, grouse restoration has not produced long-term success. During the past 20 years, grouse numbers have dwindled in Missouri, only a few remain today.

The Conservation Department undertook the study in 2011 in response to interest from the Missouri Grouse Chapter of the Quail and Upland Wildlife Federation (QUWF) and private landowners to restock grouse in the Missouri River hills. The effort used cutting-edge technology to determine if a portion of the river hills region could sustain a ruffed grouse population if birds from other states were released there.

The Conservation Department has used partnerships with federal agencies, nongovernmental organizations, and private landowners in the river hills region in an attempt to create more of the habitat that grouse need. Especially important to grouse is "early-successional" forest habitat that develops after forest management disturbance, such as timber harvests. The two-year study was aimed at determining whether habitat management efforts had changed the river hills landscape enough to make it suitable for ruffed grouse.

The Missouri Resource Assessment Partnership developed land-cover type maps and used light detection and ranging (LIDAR) data to assess canopy height within the study area. During the

Birders: Citizen Conservationists

» **CACHE, or the Conservation Area Checklist project**, is an asset to birds and birdwatchers. The Web-based database, created by the Audubon Society of Missouri and the Department of Conservation, tracks the occurrence of birds on Conservation lands. The data collected are used to enhance bird habitats and birding opportunities.

» **Audubon Society of Missouri members add information** to the database about birds sighted during their visits to Conservation lands. The Department of Conservation uses the bird monitoring information to create or adjust land management plans to help restore or maintain healthy bird populations.

» **Birders use CACHE as a source of information** for birdwatching locations. To view CACHE information, including area checklists or how to join or enter information, visit mobirds.org.

» **Quick CACHE facts for Conservation Department areas**

» 17,361,120 — Total individual birds reported

» 358 — Distinct species reported in all areas

» 24,392 — Total trips reported in all areas

» 22,466 — Total volunteer hours reported in all areas

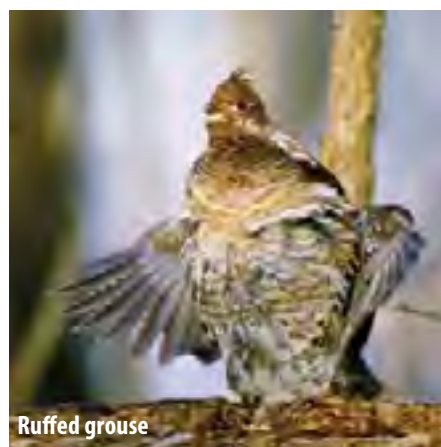
» **CACHE began in 2005.** Initially, it was meant to collect bird sightings to generate printable checklists and bird occurrence data for each conservation area. However, the information is also useful for making land management decisions that benefit birds.

second year, results of the land cover and LIDAR data analysis enabled Resource Scientist Jason Isabelle and collaborators with the USDA Forest Service to conduct population modeling to determine how a restocked population might respond to the amount of habitat available. The study's collaborators determined that the river hills region would not be able to meet the birds' needs, given the amount of habitat that is currently available.

Ruffed grouse are not nearly as adaptable as their larger relatives, wild turkeys, and require young, dense, forested habitats to survive.

"Without sufficient amounts of early-successional forest habitat, ruffed grouse are simply not able to persist," says Isabelle.

Conservation work completed on private and public land, with the assistance of the Department, in the River Hills Conservation Opportunity Area has improved habitat for wild turkey, white-



Ruffed grouse

tailed deer, quail, songbirds, and other wildlife.

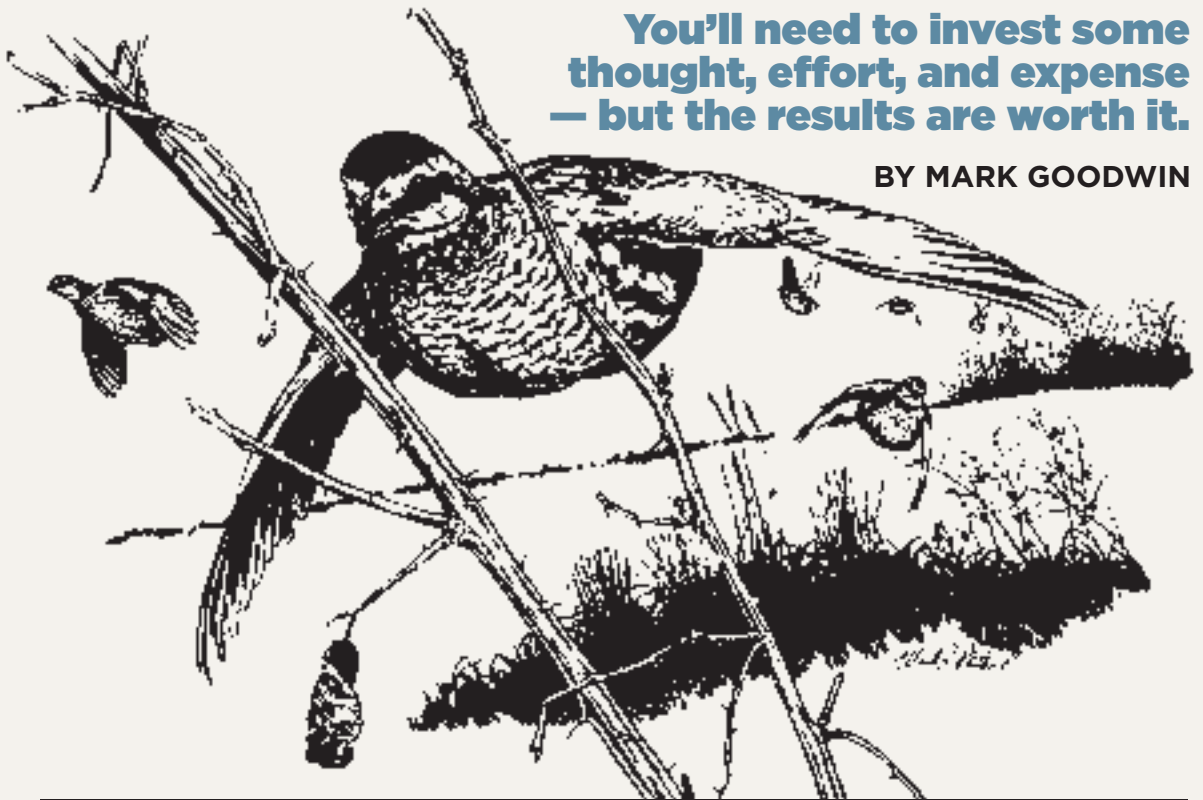
Missouri is not alone in experiencing declines in ruffed grouse numbers. Populations of the bird have declined throughout much of their southern range as a result of forest maturation.



QUAIL HUNTING: Getting Started

You'll need to invest some thought, effort, and expense — but the results are worth it.

BY MARK GOODWIN



“GOT A POINT OVER HERE!” YOUR BUDDY YELLS. You ROUND A BEND AND SEE, at the edge of a thick patch of woods, your friend’s pointer, stone still and tail high. A good shot is going to be tough. The angle of the pointer’s head indicates the quail are in a mass of wild plum, overhung by tree limbs and saplings. When the birds flush, they will likely fly deeper into the woods.

You walk in to flush the quail while your friend watches for birds along the edge. You lean over to avoid some low-hanging tree limbs, and that’s when the covey of 20 birds flushes in a whirl of brown wings. You try to put shotgun to shoulder, but a limb grabs your left arm. By the time you shake yourself free, the birds are gone. Your buddy makes three shots as the entire covey flies deeper into the woods. He connects on two oak trees and a hickory sapling.

That’s quail hunting — often tough and sometimes frustrating. But when it comes together: a stylish point, a fine shot, a bird brought to hand by a well-trained dog — it’s hunting at its best. If you haven’t tried quail hunting, here’s what it takes.

PHOTO BY NOPPADOL PAOTHONG;
MARK RATHIEL ILLUSTRATION

Knowledge of the Bird

Missouri's northern bobwhite quail have very specific habitat requirements. They thrive where the ground has been disturbed. Some fields of grain crops meet this requirement, as do fields that have been disked or burned and allowed to grow in native plants. These fields provide food for quail in the form of seeds and bugs, and open ground that allows young quail to walk around easily. The birds prefer small fields, ideally less than 20 acres, laced with brushy draws and surrounded by patches of woods, which offer quail places to rest, nest, and escape predators. There should also be roosting fields of knee-high vegetation, with little or no woody cover, nearby. If any of this variety is missing, an area will have few, if any, quail.

As with habitat, the daily habits of bobwhite are predictable. In fall, bobwhite form into groups called coveys. The number of birds in a covey is commonly 10 to 12 and can be as many as 30. In late evening, quail move to their roosting fields and arrange themselves in a tight bunch,

tail to tail. This behavior helps quail conserve heat on cold nights. By roosting in open fields, if disturbed by a predator at night, they can quickly flush without the chance of flying into overhead brush and limbs.

At first light, on clear, still mornings, quail often call from the roost. Depending on conditions, they then either fly or walk to an area where they feed. In harvested crop fields, such as corn, soybeans, or milo, quail quickly fill their crops with waste grain, at which time they move to brushy or wooded areas close by where they dust their feathers and loaf. Again, depending on conditions, quail move from protective cover in the afternoon to feed again before going to roost. If available, quail will drink standing water, but they can get all the water they need from drinking dew and using the water their bodies make when they digest food.

Gear

The equipment needed for quail hunting is fairly simple. You need a shotgun that is equipped with an open choke (cylinder, skeet, or improved cylinder). With birds flushing near you, quail shots are typically close, and you will need as wide a shot pattern as possible. Number 7½ or 8 shot is right for quail. It also pays to shoot as heavy a field load as you can find for your shotgun, which will give you a denser pattern along with the wide pattern of open chokes.

Quail hunting involves lots of walking, so invest in a high-quality pair of hunting boots. With all the walking, it's also important to dress appropriately. That means go light. If you bundle up as you would for a cold day on the deer stand, you will end up sweat-soaked. With a little experience, you will find what's comfortable for you.



Northern bobwhite quail



Quail arrange themselves in a tight bunch in late evening. This helps quail conserve heat on cold nights.

BOBWHITE QUAIL: NOPPADOL PAOTHONG; COVEY: JIM RATHER



A light game vest to carry your birds and shells will have enough pocket space for water and snacks. Buy one in hunter orange, so your hunting buddies and other hunters can see you. A hunter orange cap is a must, too. Sometimes all that is visible of a quail hunter is the top of his head as he makes his way through high cover.

Brush pants, designed to turn thorns, or a pair of chaps designed for the same purpose are another must when quail hunting. Hunts often require walking through briars. If you wear jeans, quail hunting will be a painful experience.

Bird Dogs

Memorable quail hunts can hinge on good bird dogs. There are many breeds, from English pointers to pointing labs. The key is getting a dog out of a line that is intelligent, is bold, has a strong instinct to hunt, has a superior nose, and is eager to please. If you buy a puppy, how do you know if it has these qualities? Look to its parents. If they hold these traits, chances are good the pup will have them, too.

Gear for quail hunting is fairly simple. Besides a shotgun that is equipped with an open choke, you will need a good pair of hunting boots, a light game vest to carry your birds, a hunter orange cap, and brush pants for walking through briars.

Another consideration with bird dogs is how far they range while hunting for quail. Some bird dogs have been bred to range out, often several hundred yards, in search of quail. This works fine if you hunt on horseback, but most quail hunters hunt on foot and prefer dogs that hunt closer. How can you know the range of a dog when you buy it as a pup? Again, look to the parents. If they hunt close, chances are their pups will, too.

Some hunters pay a professional to train their bird dogs, but this is expensive, and you miss the joy of watching a pup learn. Moreover, if you don't understand how a dog is trained, you could reverse all the training by unwittingly mishandling your dog.

Training a bird dog is not that difficult. The first step is simply taking the pup out and letting it run and explore. This builds the pup's hunting instincts and confidence. You do this for six months to a year, depending on the pup. You give no commands. Just let the pup play.

Formal training that follows involves three basic skills: sensitivity to a dog's temperament, proper timing of corrections, and repetition.

Quail prefer small fields laced with brushy draws and surrounded by patches of woods, which offer them places to rest, nest, and escape predators. There should also be roosting fields of knee-high vegetation, with little or no woody cover, nearby.

Some dogs are bold and take corrections well. Others are more timid and require more gentle, and/or slower training. A timid dog can be ruined by training methods that are too forceful. On the other hand, a bold, dominant dog may require firm training. Professional trainers refer to this as "reading" a dog — figuring a dog's temperament and training accordingly.

Proper timing of corrections involves making them immediately after a dog makes a mistake. Research indicates that if as few as 10 seconds pass before a correction is made, a dog has difficulty understanding what it did wrong. A classic example: If a dog does not come in when you call it, you don't reprimand it when it finally does come to you because the dog will think it is being punished for coming to you.



The third point, repetition, is just that — repeating what has been learned until a dog's response becomes a conditioned response, automatic.

An excellent reference on details concerning training bird dogs is *Best Way to Train Your Gun Dog: The Delmar Smith Method*, by the late Bill Tarrant. The book gives all the details you need to know concerning how to turn a pup into a skilled bird dog.

Hunting Strategy

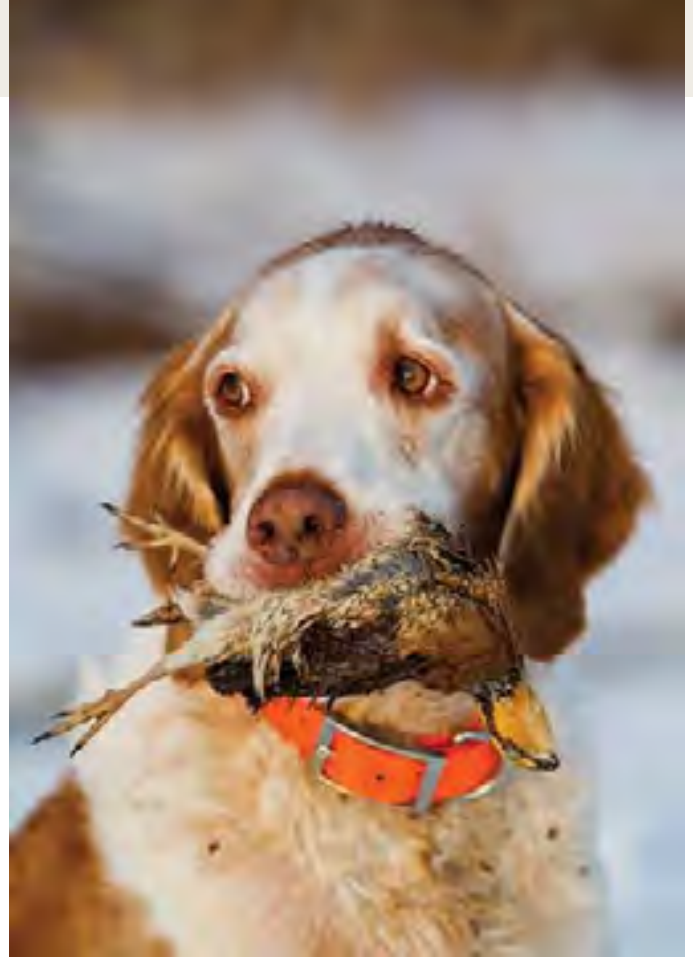
As always, the key to successful hunting is being where the game is. If you have ground that supports quail, and you have a bird dog that has been trained to find quail, hold points, come when called, and retrieve downed quail, you are in business. The hunting is simple. Put your dog on the ground and follow it. It is amazing how many quail hunters fail to do this. They spend much of a hunt blowing their whistle and giving their dog directions. Big mistake. Those hunters end up with a distracted dog. The dog's job is to find birds. Give it the freedom to do so.

Once you find quail, it's time for decisions. If a covey holds 15 birds or more, you should only take a few birds, but then leave the rest for next year's breeding stock. Leaving enough birds in a covey also helps ensure that there are enough birds to bunch up and stay warm on a cold winter night.

If the ground is frozen hard on a day you plan to quail hunt, wait until midmorning so the ground has a chance to soften up. Frozen ground can injure a bird dog's feet. Moreover, quail season is more than two months long. Bird dogs, like athletes, can suffer injuries from too much exertion. A two- to three-hour hunt is about right for a bird dog, particularly if it is hunted several days in a row. Make sure you feed your hunting partner quality dog food. If your dog shows signs of weight loss and stiffness, take a few days off. Serious quail hunters often own several dogs, so while resting one dog, they can hunt another. Yes, quail hunting can become an obsession; it's that much fun.

Cleaning and Cooking

Quail are easy to clean. With poultry shears or a knife, cut off the wings, head, and feet. Starting at the head end, peel the skin and feathers down and off the carcass. Again, with poultry shears or a knife, cut all the way up the center of the back by starting at the vent and cutting upward. Open the back and remove the entrails. On a cutting board, lay the carcass on its back and with a sharp knife, cut down the center of the breast, lengthwise, along the breastbone or sternum. With poultry shears or scissors, finish separating the carcass into two halves by cutting through the bottom of the breastbone.



Bird dogs, like athletes, can suffer injuries from too much exertion. A two- to three-hour hunt is about right for a bird dog, particularly if it is hunted several days in a row.

Clean each half carefully in cold water. Next to the ribs, thumb out the lungs that adhere there. At the top of each thigh, thumb out the kidneys. If any edible portions of the quail are bloodied or damaged by shot, trim off liberally. This leaves quail ready to cook.

Quail halves cook quickly and are great for frying or grilling.

To grill, season quail halves with your favorite dry rub or marinade. Place quail on a grill heated to medium high and grill for four or five minutes a side.

To fry, soak quail halves in milk, then coat with all-purpose flour well seasoned with seasoning salt and a little black pepper. Pan fry in one-third inch of canola oil, heated to 350 degrees, for seven to eight minutes on one side, and five or six minutes on the other side, or until both sides are browned. Drain on paper towels before serving.

Learn more about hunting quail and other upland game birds at mdc.mo.gov/node/3607. For more on quail management, visit mdc.mo.gov/node/3607. ▲

Mark Goodwin is a retired teacher, avid outdoorsman, and freelance writer from Jackson, Mo.



TURTLE RO

at EAGLE BLUFFS



From left: Western painted turtle,
false map turtle, red-eared slider

UNDUP

Scientists and volunteers
brave wet and muck for better
all-species management.

.....

BY ADRIANE PODGURSKY | PHOTOGRAPHS BY DAVID STONNER

I feel the weight of the water pressing against me, and my feet sink deeper into the muddy wetland bottom with each step. Frogs croak, birds chirp in the trees, and dragonflies zoom around my ears, but I don't have time to watch the wildlife around me. I volunteered to help trap turtles, and the mud, waders, and heavy poles I'm carrying to anchor the net trap make the morning an adventure.

I am one of many volunteers helping Vic Bogosian, Department of Conservation wildlife biologist and manager of Eagle Bluffs Conservation Area (south of Columbia), with his turtle trapping research project. Most management activities at Eagle Bluffs Conservation Area (CA) are focused on other animal residents, but a life-long passion for herpetology inspired Vic to study these unique creatures.

CATCH, TAG, RELEASE

From April to September, Vic traps turtles to collect population information. To help him with this endeavor, members of the community make their way through mud, weeds, and water to set traps and mark turtles. It's a varied group: Girl Scouts, members of the Missouri Master Naturalists program, students from the University of Missouri Student Chapter of the Wildlife Society, the University of Missouri Herpetological Society, the Conservation Honors program at the University of Missouri-Columbia, and anyone interested in conservation. Trapping is difficult, sweaty work in the summer, and volunteers often leave dirty and exhausted, but all are excited by the opportunity to handle and observe these animals.

"Little did I know what an educational opportunity this was going to be," says Chris Egbert, a regular turtle trapping volunteer and a Missouri Master Naturalist of the Boone's



Lick chapter. "I have marveled at Vic's skill in working with the different types of volunteers working on this project."

ALL-SPECIES MANAGEMENT

As manager of Eagle Bluffs CA, Vic makes decisions that help keep conditions ideal for migratory bird populations. However, it is his responsibility to take all wildlife species on the area into consideration. Similar to migratory birds, aquatic turtles need access to appropriate water levels, temperature, food, and vegetation for cover. The goal of his turtle trapping program is to see how his management decisions affect turtles, and how to make beneficial decisions for them.

Turtles are complex creatures. They feed on a variety of foods including aquatic plants, insects, snails, crayfish, and dead animals. Turtles can vary widely in appearance based on species. Their shells, which are a permanent part of their body and a source of protection from their environment, can be soft or hard, and either round or an elongated oval shape. Although the color of their upper shell (called the carapace) usually helps them to blend in the

Turtle trapping is important for Eagle Bluffs Conservation Area. The Department of Conservation makes management decisions based in part on scientific research like turtle trapping.



To set traps, volunteers travel deep into the wetlands area and wade into a pool of murky, muddy water. As turtles are removed from the trap, volunteers record each animal's gender, species, trap location, and any other distinguishing characteristics.

murky wetlands bottom, on many species the lower shell (called the plastron) can have patterns full of red, yellow, and black designs.

The most fearsome of the turtle species found at the area is the common snapping turtle. These animals can weigh up to 35 pounds, and can easily snap up birds, small mammals, and other aquatic reptiles with their strong jaws. Red-eared sliders are the most common turtle at Eagle Bluffs CA. There are also painted turtles and false map turtles. A less-common aquatic turtle is the spiny softshell, which has a leather shell instead of a hard, bony one. The three-toed box turtle is found at Eagle Bluffs CA, but that land-dweller is not caught in the hoop traps. Species of turtles on other conservation areas around the state vary, so other managers have different challenges.





**Eagle Bluffs
CA manager
Vic Bogosian
explains to
volunteers how
turtles will be
tagged in his
turtle trapping
research project.**

THE VOLUNTEER EXPERIENCE

Turtle trapping at Eagle Bluffs during the summer months is hot and sticky work. Vic sends emails to volunteers notifying them of turtle trapping dates and always reminds them to “wear clothes you don’t care about.” He then takes groups out in the wetlands area to either place traps or to check traps, mark turtles that were caught, and then release them back into the area. This gives him a better idea about where turtle populations are concentrated.

To set traps, volunteers travel deep into the wetland area and wade into a pool of murky, muddy water. The traps, called single-throated hoop nets, are then strung between two poles and hammered into the wetland’s bottom to keep them from falling over. Volunteers place the traps so they do not sag or sink under the surface of the water. If the trap is completely submerged, there is a risk that captured turtles will drown due to lack of access to air. The traps are then baited with Asian carp provided by the Conservation Department’s Fisheries Divi-

sion and the U.S. Geological Survey’s Columbia Environmental Research Center.

Once successfully placed in the water, the traps are left overnight and checked early the next morning. As turtles are removed from the trap, volunteers record each animal’s gender, species, trap location, and any other distinguishing characteristics, and then they mark individuals by drilling holes along the outer edge of the turtle’s shell (a common practice among herpetologists). The divisions along the shell (called scutes) are arranged the same way on most turtle species. Since holes are drilled in a consistent pattern along these divisions, there is a uniform numbering system for most of the turtles captured. This makes it easier to record information about the turtles because each turtle has an identifying number. Only snapping turtles and softshells get marked differently. Due to their size, shell type, and aggressive nature, it is safer for both the turtle and the researcher to mark them using a passive integrated transponder, or PIT tag. These



The turtle trapping project at Eagle Bluffs CA allows citizens to be directly involved in the research, and volunteers get to discover nature in a new way.



tags are the same as those injected into family pets to help return them if they get lost. A coded tag is injected into the turtle's back leg and is recorded using a special scanner.

LEARNING CURVE

Once the turtles are marked or tagged, Vic will be able to use different population models to estimate the population sizes and distribution. "So really, these first few years at Eagle Bluffs trapping turtles, the objective is to try to get as many animals as we can marked," says Vic.

The turtle information is entered into a large database each year. Trapping had entered the third year in 2013, and by the end of the season there were more than 1,300 turtles marked. Population estimates for some pools were nearly 1,000 individuals, and they fluctuated around natural flood and drought events. Future population models will take management actions like planting, disking, and herbicide treatment of invasive species into account.

Turtle trapping is important for Eagle Bluffs CA because knowing where the area's turtle populations are concentrated helps Vic make decisions about water levels on the wetland area. The Department of Conservation makes management decisions based in part on scientific research like turtle trapping.

LABOR OF LOVE

These types of projects also benefit volunteers by providing research experience and helping

them discover nature in a new way.

"You aren't just looking at it, you're in it!" says Katie Moreau, a student at University of Missouri studying fisheries and wildlife and a seasoned turtle trapping volunteer. As someone studying wildlife management, she sees the benefit of turtle trapping from a conservation perspective. "It is a way to get people involved in research, which is an important step in conservation success." She says having safe turtle handling experience has already helped her with an internship and has been a good way for her to see adaptive management practices, a concept she is learning in her classes, firsthand.

During my own volunteer experience, I fought my way through high-reaching grasses surrounding the pools, trying to avoid submerged logs beneath all the green duckweed floating at the water's surface. I accidentally filled chest waders with water because I went in deeper than expected. I also got to enjoy long walks across the marshland, where I often saw frogs, fish, and other aquatic animals inches away. Overall, the experience allowed me to be intimately connected with nature. As is true for many other volunteers, helping with this project gave me the chance to work outdoors purposefully, in a way I had never been able to before. ▲

Turtles are marked by drilling holes along the outer edge of their shell, a common practice among herpetologists. This makes it possible to identify and record information about the turtles.

Adriane Podgursky is an animal sciences major at the University of Missouri-Columbia.



DISCOVER nature

The Conservation Department wants to help you connect with the people, places, and activities you love.

There are so many fun, convenient, and inexpensive ways to spend time with family and friends, and to get out and learn about the outdoors, in Missouri. Whether it's events, newsletters, shooting ranges, photo contests, nature centers, skills classes, or many more options, we have something to fit your busy schedule and your outdoor interests. Starting in January 2014, we will highlight upcoming events around the state — and let you know how to find more near you. We will also announce our new photo contest and tell you how you can participate. We hope you enjoy the season, and we look forward to offering you many adventures in nature in the new year.

Check out Eagle Days on Dec. 7 and 8 at Squaw Creek National Wildlife Refuge. Visit mdc.mo.gov/node/16598 for more information.



NATURE AND THE ARTS — AN EVENING WITH TIM ERNST

DEC. 6 • FRIDAY • 5–6 P.M. OR 7–8 P.M.

Southwest Region | Springfield Conservation Nature Center

Registration begins Nov. 19, call 417-888-4237
Ages 12 and up

Before or after taking a stroll outdoors, enjoy the scenic photography of nationally known nature photographer Tim Ernst as he returns to share images set to music from his latest publication, *Buffalo River Beauty*. Tim will be available for book signing from 6–7 p.m. and 8–9 p.m. For more information, visit Tim's website at TimErnst.com.

PIRATES OF COLUMBIA BOTTOM: INTRO TO GEOCACHING

DEC. 7 • SATURDAY • 1–3 P.M.

St. Louis Region | Columbia Bottom Conservation Area

Reservations begin Nov. 23, call 314-877-6014
Families

Bring the whole family to Columbia Bottom to be modern-day pirates through the outdoor sport of geocaching. This adventurous outdoor activity ties technology and nature together for all ages. Join us for a brief introduction on the basics of geocaching, and then try your hand at hunting for hidden treasures on the area. GPS units will be provided.



NATURE ART: NATURE'S DECOR

DEC. 7 • SATURDAY • 9 A.M., 11 A.M., 1 P.M., OR 3 P.M.

Southeast Region | Cape Girardeau Conservation Nature Center

Registration begins Nov. 15, call 573-290-5218
Ages 18 and up

The holidays are here, and we're in the mood to decorate! We'll use nature's resources to create wonderful winter wreaths, swags, and garlands. You provide a grapevine wreath (you choose the size and shape you want), and we'll provide everything else to do your decorating.

EAGLE DAYS

DEC. 7 AND 8 • SATURDAY AND SUNDAY • 9 A.M.–5 P.M.

Northwest Region | Squaw Creek National Wildlife Refuge in Holt County
No Registration required
All ages

If you've never seen a bald eagle in the wild, then here is your chance. Missouri is the winter home to thousands of bald eagles migrating from northern states. Open waterways for fishing and a taste for migrating waterfowl make Missouri a winter haven for eagles. Special activities, bus tours, and spotting scopes will be set up for your eagle viewing pleasure. See a live eagle up close at the eagle show put on by Dickerson Park Zoo, hourly from 9 a.m. to 4 p.m. on Saturday and 11 a.m. to 3 p.m. on Sunday.

'TIS THE SEASON

DEC. 10 • TUESDAY • 10–11:30 A.M.

St. Louis Region | Dennis and Judith Jones Visitor and Education Center in Forest Park
Reservations begin Nov. 5, call 314-877-1309
All ages

Squirrels and foxes are breeding. Other animals are denning up for the winter. Birds are gathering



at feeders and many are migrating. We are getting ready for the holidays. Join us and relax from the hustle and bustle of the season. This program brings us indoors to highlight some of the bounties of winter. We will make a wreath decorated with fall and winter outdoor finds.

NATURE CRAFT NIGHT

DEC. 11 • WEDNESDAY • 6–8 P.M.

Northeast Region | Northeast Regional Office
Registration begins Nov. 12 and ends Dec. 6, call 660-785-2420

All ages welcome. Children must be accompanied by an adult

It is time for our annual holiday nature-crafting event. Bring your family and friends to make ornaments, decorations, and bird feeders out of a variety of natural items.

BIRD FEEDER WORKSHOP

DEC. 14 • SATURDAY • 10–11:30 A.M.

Southwest Region | Shepherd of the Hills Fish Hatchery and Conservation Center
Registration required, call 417-334-4865
Families

This is our annual workshop for families to build their own wooden bird feeder. Each family will be able to build one "hopper-style" bird feeder to take home. In addition to putting together the pre-cut and pre-drilled feeder, you will learn about the best types of seed to put into the feeder to maximize your winter bird watching. Bring a hammer.

SHORT-EARED OWL HIKE

DEC. 14 • SATURDAY • 4–6 PM

Southwest Region | Wildcat Glades Conservation and Audubon Center, Shawnee Trail Conservation Area (Mindenmines)
Registration required, call 417-629-3423
Ages 8 and up

Join us for a naturalist-led hike to search for our special winter residents, the short-eared owl. Discover the short-eared owl and other birds of prey as the sun sets on a local conservation area.

CONSERVATION CONNECTIONS

For regular updates on Conservation Department news and events, subscribe to one or more of the Department email lists at mdc.mo.gov/user_mailman_register. For other ways to connect with the Department, including blogs, Facebook, Flickr, Nature Shop, Twitter, YouTube, or the kids' magazine *Xplor*, see Page 3.



Learn all about Missouri's wild mammals, like this gray fox, at the Cape Girardeau Conservation Nature Center on Dec. 19.

DEER MANAGEMENT WORKSHOP

DEC. 14 • SATURDAY • 11 A.M.–4 P.M.

Northeast Region | M.W. Boudreaux Memorial Visitor Center, Mark Twain Lake Dam

Registration required, call 660-385-2616, ext.

118, or email ted.seiler@mdc.mo.gov

Ages 18 and up

Deer workshop that will cover a variety of topics including habitat improvement, camera surveys, deer biology, cost-share, deer aging, diseases, managing deer on small properties with co-ops, etc. Lunch will be provided by the Monroe City Chapter of Whitetails Unlimited.

KIDS' CRAFT DAY

DEC. 14 • SATURDAY • 10 A.M.–1 P.M.

Kansas City Region | Burr Oak Woods

Conservation Nature Center

No registration required

All ages

Kids' Craft Day is a great way to make the holidays special. Make one-of-a-kind natural gifts, including creating your own gift-wrap, to give to the people you love this holiday season. For more information, email burr.oak@mdc.mo.gov

WINTER'S GIFTS

DEC. 18 • WEDNESDAY • 10–11 A.M.

St. Louis Region | Powder Valley Conservation Nature Center

Reservations begin Dec. 4, call 314-301-1500

Ages 3–6

On the first day of winter nature gave to me . . . a cardinal in an oak tree! Come and celebrate nature's winter animals as we practice counting in our own "12 days of winter" song. We'll also read a winter story and make a gift to give back to nature.

NATURE CENTER AT NIGHT: MAMMALS OF MISSOURI

DEC. 19 • THURSDAY • 5–8 P.M.

Southeast Region | Cape Girardeau

Conservation Nature Center

No registration required

All ages

Learn fascinating facts about Missouri's wild mammals — many of which make their homes in the diverse habitats of southeast

Missouri. Find out what they are, where they live, and how they survive. Attend one of the two naturalist-led mammal presentations at 6 or 7 p.m. Youth and adult groups welcome.

NIGHT HIKE — BUSCH HIKING/BIKING TRAIL

DEC. 21 • SATURDAY • 6–9 P.M.

St. Louis Region | August A. Busch Memorial Conservation Area

Reservations begin Dec. 6, call 636-441-4554

Families

Experience the sounds of the night during a moderate night hike at the August A. Busch Memorial Conservation Area. We will hike the 3.5-mile Busch Hiking/Biking Trail listening for coyotes howling and owls calling in the cool winter night. The hike is mild to moderate effort. Gravel path in forest and fields with short, gentle hills. Winter weather can increase the hike difficulty to moderate.

WHOOOO'S IN YOUR BACKYARD?

DEC. 21 • SATURDAY • 10 A.M.–2:30 P.M.

Kansas City Region | Anita B. Gorman

Discovery Center

No registration required

All ages

Of the 18 owl species native to North America, eight live in or visit Missouri. Discover how to identify owls by their calls, shapes, and field markings. Put your owl knowledge to work as you create your own recycled owl and apply your scientific skills as you investigate an owl's food chain. After learning about owls, test your knowledge by challenging a friend to our Owl-ology game.

NATURE BY DESIGN

DEC. 27 AND DEC. 28 • FRIDAY AND SATURDAY • 10 A.M.–3 P.M.

Central Region | Runge Conservation Nature Center

No registration required

All ages

Holiday Happenings is often referred to as our Open House. Our theme this year is Nature by Design. Discover nature through I Spy nature games, natural shapes scavenger hunt, winter weed arrangements, stories, crafts and refreshments.



CONSERVATION DESTINATION: GENERAL WATKINS

DEC. 28 • SATURDAY • 9 A.M.–2 P.M.

Southeast Region | General Watkins

Conservation Area

Registration begins Dec. 3, call 573-290-5218

Ages 8 and up

Walking through General Watkins Conservation Area is a great way to spend time with family during the holidays. We'll venture along the Schlosser Loop trail and then walk Cemetery Ridge trail after a lunch break. The total distance is approximately 3 miles and is easy walking. Participants should bring a lunch and drink and dress for the weather. The area is 15 miles south of Cape Girardeau, on Highway 61, or 1.5 miles south of Oran on Highway 77.

FAMILY PLINKING

DEC. 28 • SATURDAY • 7:30–9:30 A.M.

St. Louis Region | Busch Shooting Range

Reservations begin Nov. 28, call 636-441-4554

Ages 8 and up. Ages 8–15 must be accompanied by a parent or guardian

Bring the family out and try that new BB gun, air gun, or .22. This program is designed to get families to the range without feeling overwhelmed. Join our range staff for a morning of plinking. We will cover safety, parts of the firearm, aiming, and shooting. Then the family will have some live fire time.

FEEDING FRENZY

JAN. 9 • THURSDAY • 1–3 P.M.

Southeast Region | Cape Girardeau

Conservation Nature Center

No registration required

All ages

Thanks to some amazing animal care volunteers, nature center reptiles, amphibians, and fish are fed a delicious smorgasbord of crickets, worms, minnows, and more. Drop by to visit with the volunteers and staff as they feed the hungry critters.

CONSERVATION FACILITIES NEAR YOU

Conservation Department nature centers, staffed shooting ranges, regional offices, and hatchery visitor centers offer free programs, events, and information. Visit, call, or go online to find out more about what each one has to offer.

KANSAS CITY REGION

- 1 Kansas City Regional Office**
12405 SE Ranson Road, Lee's Summit, MO 64082
816-622-0900 | mdc.mo.gov/node/256
- 2 Burr Oak Woods Nature Center**
1401 NW Park Road, Blue Springs, MO 64015
816-228-3766 | mdc.mo.gov/node/280
- 3 Anita B. Gorman Discovery Center**
4750 Troost Avenue, Kansas City, MO 64110
816-759-7300 | mdc.mo.gov/node/281
- 4 Lake City Shooting Range and Center**
28505 E. Truman Road, Buckner, MO 64016
816-249-3194 | mdc.mo.gov/node/282

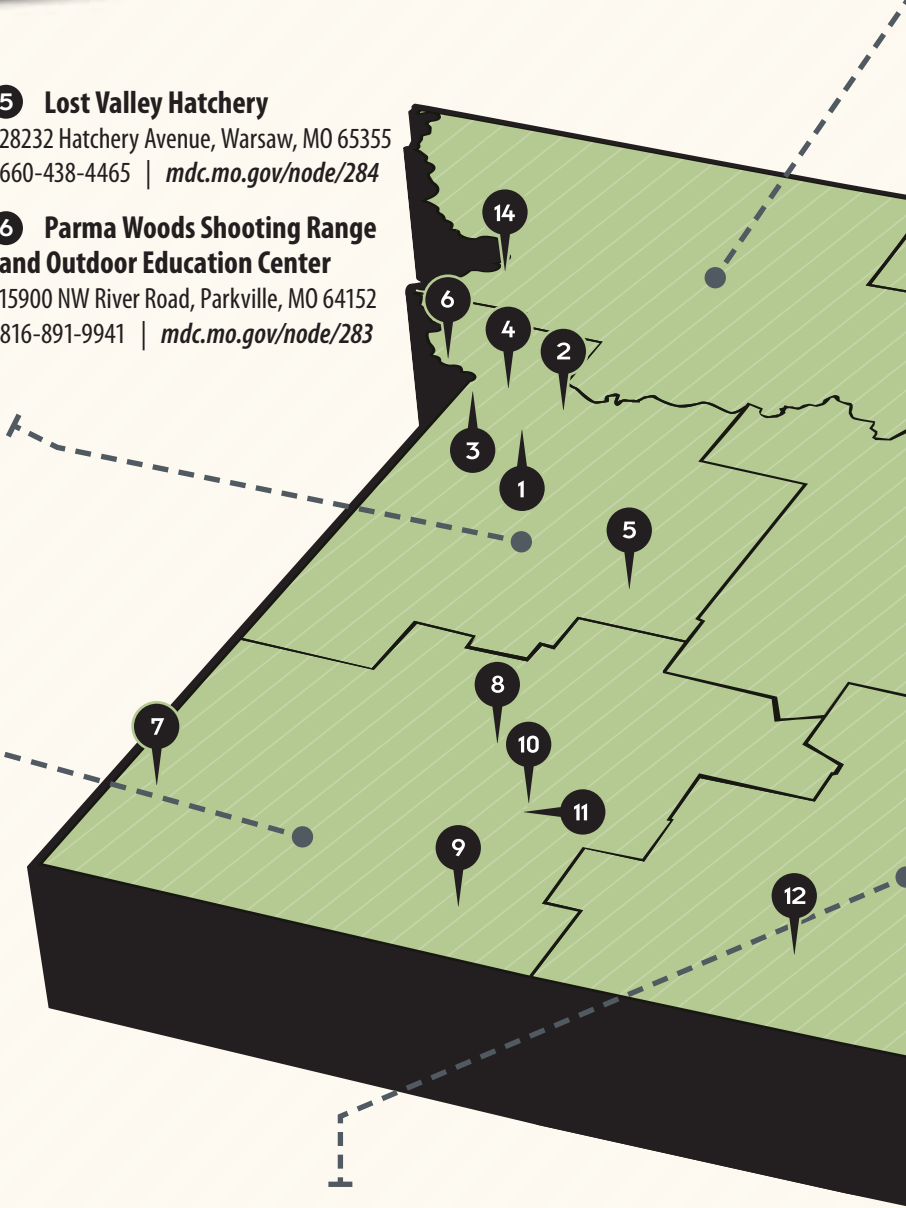
- 5 Lost Valley Hatchery**
28232 Hatchery Avenue, Warsaw, MO 65355
660-438-4465 | mdc.mo.gov/node/284
- 6 Parma Woods Shooting Range and Outdoor Education Center**
15900 NW River Road, Parkville, MO 64152
816-891-9941 | mdc.mo.gov/node/283

SOUTHWEST REGION

- 7 Joplin Office in the Wildcat Glades Conservation and Audubon Center**
201 W. Riviera Drive, Suite B, Joplin, MO 64804
417-629-3423 | mdc.mo.gov/node/292
- 8 Andy Dalton Shooting Range and Outdoor Education Center**
4897 N. Farm Road 61, Ash Grove, MO 65604
417-742-4361 | mdc.mo.gov/node/288
- 9 Shepherd of the Hills Fish Hatchery and Conservation Center**
483 Hatchery Road, Branson, MO 65616
417-334-4865 | mdc.mo.gov/node/290
- 10 Southwest Regional Office**
2630 N. Mayfair Avenue, Springfield, MO 65803
417-895-6880 | mdc.mo.gov/node/257
- 11 Springfield Conservation Nature Center**
4601 S. Nature Center Way, Springfield, MO 65804
417-888-4237 | mdc.mo.gov/node/287

OZARK REGION

- 12 Ozark Regional Office**
551 Joe Jones Boulevard, West Plains, MO 65775
471-256-7161 | mdc.mo.gov/node/266
- 13 Twin Pines Conservation Nature Center**
Route 1, Box 1998, Winona, MO 65588
573-325-1381 | mdc.mo.gov/node/293



NORTHWEST REGION

14 Northwest Regional Office

701 James McCarthy Dr., St. Joseph, MO 64507
816-271-3100 | mdc.mo.gov/node/268

CENTRAL REGION

15 Central Regional Office and Conservation Research Center

3500 East Gans Road, Columbia, MO 65201
573-815-7901 | mdc.mo.gov/node/265

16 Runge Conservation Nature Center

MO Hwy 179, Jefferson City, MO 65102
573-526-5544 | mdc.mo.gov/node/296

NORTHEAST REGION

17 Northeast Regional Office

3500 S. Baltimore, Kirksville, MO 63501
660-785-2424 | mdc.mo.gov/node/269

ST. LOUIS REGION

18 Jay Henges Shooting Range and Outdoor Education Center

1100 Antire Road, High Ridge, MO 63049
636-938-9548 | mdc.mo.gov/node/299

19 Forest Park Office

5595 Grand Drive, St. Louis, MO 63112
314-877-1309 | mdc.mo.gov/node/10254

20 Powder Valley Conservation Nature Center

11715 Cragwold Road, Kirkwood, MO 63122
314-301-1500 | mdc.mo.gov/node/271

21 Columbia Bottom Conservation Area

801 Strodtman Road, St. Louis, MO 63138
314-877-6014 | mdc.mo.gov/node/298

22 August A. Busch Memorial Conservation Area and St. Louis Regional Office

2360 Hwy D, St. Charles, MO 63304
636-441-4554 | mdc.mo.gov/node/300

Busch Shooting Range and Outdoor Education Center

2360 Hwy D, St. Charles, MO 63304
636-441-4554 | mdc.mo.gov/node/270

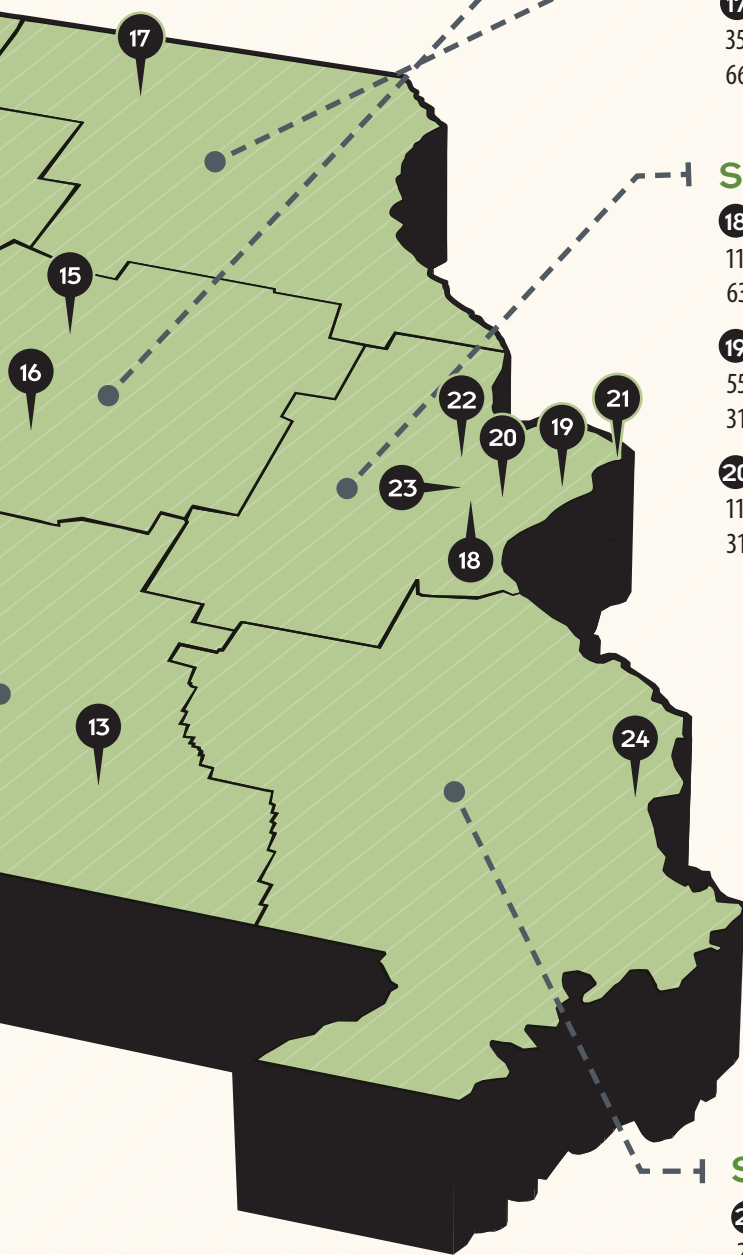
23 Rockwoods Reservation

2751 Glencoe Road, Wildwood, MO 63038
636-458-2236 | mdc.mo.gov/node/272

SOUTHEAST REGION

24 Cape Girardeau Conservation Nature Center

2289 County Park Drive, Cape Girardeau, MO 63701
573-290-5218 | mdc.mo.gov/node/297



Horned Lark

This winter watch for these ground foragers in open areas statewide.

EVERY WINTER AFTER the first snow, I head to the U.S. Army Corps of Engineers' Riverlands Migratory Bird Sanctuary in West Alton to try to photograph horned larks (*Eremophila alpestris*). I say "try" because it is difficult to get a sharp image of a horned lark as they are always on the move, foraging on the ground for seeds and other morsels. The second challenge is to capture a glint, something photographers call a "catchlight," in the horned lark's deep, black eyes. You wouldn't think such a sparkle would be so important, but without it the horned lark's eyes can appear hollow and lifeless.

Last December, Charlie Deutsch, environmental manager at Riverlands, called me to report the first influx of horned larks following a midweek snow. The weekend couldn't come fast enough but I finally made it to Saturday and hit the road long before dawn. A couple hours later, I was folded into a make-shift blind in the snow with my lens trained on the ground beneath one of the area's bird feeders. I knew horned larks were opportunistic ground foragers and were not shy about feeding on the wasted seeds of cardinals, finches, and other songbirds. As the promise of sunrise cast an azure tint on the snowy landscape, I saw one, two, and then several small birds dropping to the ground near the feeder. It took me a few seconds to confirm my suspicion that the birds, nondescript in the muted light, were all horned larks!

I watched the bat-eared larks in the twilight and waited impatiently for some more help from the sun. There wasn't a cloud in the sky, so I knew the soft glow of morning that photographers relish was near. Minutes seemed like hours, but I finally felt the soothing balm of the sun's rays on my neck as the bluish snow turned white. I focused my lens on a striking male with a black mustache, buttery-yellow chin, and prominent, feathered "horns." I waited for the requisite twinkle of reflection in the lark's eye and released the shutter.

Horned larks are common across Missouri but most people never notice them because they blend so well with their preferred habitat of open fields and bare agricultural ground. They are among Missouri's earliest nesters and can even be found nesting in a blanket of February snow. I look for horned larks on public land with plenty of open ground, such as the Riverlands, where I photographed this bird, or the Department's Columbia Bottom Conservation Area.

Horned larks can be photographed any time of year but their antics in the snow are hard to beat. I enjoy watching territorial males as they spend as much time chasing off other birds as they do foraging for seeds themselves. Their posturing usually begins with a short flight and often ends with an out-of-control slide that leaves them careening awkwardly into one or more adversaries. I've spent a lot of time with these horned and mustachioed songbirds and I consider it time well spent.

—Story and photos by Danny Brown

500mm lens + 1.4 teleconverter • f/7.1 • 1/2000 sec • ISO 400

*We help people discover nature through our online field guide.
Visit mdc.mo.gov/node/73 to learn more about Missouri's plants and animals.*





Maple Woods Natural Area

Discover part of the Kansas City region's natural history in the spectacular forests of this natural area.

THE KANSAS CITY region may make for miles of urban sprawl, but one portion of this area remains untouched. Maple Woods Natural Area (NA) occupies 39 acres of natural forest and woodlands surrounded by the City of Gladstone and the Kansas City metropolitan area.

Impressive stands of black maple, a variety of sugar maple, are accompanied by scattered northern red oak, white oak, bur oak, bitternut, shagbark hickory, red elm, basswood, black walnut, and white ash. The diverse forest boasts spectacular fall colors and a wonderful winter display. Ephemeral wildflowers including Solomon's seal, Dutchman's breeches, bloodroot, and bellwort, join the varied tree stands during their spring bloom when they capitalize on the abundant sunshine on the forest floor and set seed before the tree canopy fully leafs out.

Also during spring, songbirds such as thrushes and warblers migrate through the area, while those looking for birds this winter can expect to see northern flickers and downy, hairy, and red-bellied woodpeckers.

Visitors are invited to explore this area rich in natural history and wildlife diversity using the 1.4-mile Maple Woods Nature Trail. No hunting is permitted on the area, but there is no limit to the natural wonders attentive hikers might discover.

Maple Woods NA preserves this area's natural history, displaying a small slice of what the northern Kansas City area looked like before the city became what it is today. The old-growth forest is a fond reminder of the wild lands that dominated this region only 200 years ago.

Nearly destroyed at one point, the remnant forest of Maple Woods NA was almost turned into



16–35mm lens • f/4.5 • 1/15 sec • ISO 200

a residential area and shopping mall in the early 1970s. To salvage the valuable land, now recognized by the National Park Service as a National Natural Landmark, a coalition of local citizens along with The Nature Conservancy acquired the site, which the Missouri Department of Conservation purchased in 1978. Today Maple Woods NA is owned by the Conservation Department, which leases the land to the City of Gladstone for management and maintenance.

Maple Woods NA is located 1.25 miles east of North Oak Trafficway on 76th Street in Gladstone. More information, including an area map, is available at the website listed below.

—Rebecca Martin, photo by David Stonner



Recreation opportunities: Bird watching, hiking, nature viewing

Unique features: This area is recognized by the National Park Service as a National Natural Landmark and features abundant forests dominated by beautiful black maples.

Bird Checklist: To find a printable bird checklist for the area, visit mobirds.org/CACHE/AreaChecklist.aspx?site=266

For More Information Call 816-622-0900 or visit mdc.mo.gov/a7909.

Kids in Nature



Simple Ideas
for Family Fun

Count the number of **shooting stars** you find during the peak of the Geminid meteor shower the night of Dec. 14.

Look for **bald eagles** arriving in Missouri this month.



Listen for a courting **barred owl** calling "Who cooks for you? Who cooks for you all?" Or courting **great horned owls** calling "Hoo, hoo-oo, hoo-oo."



Make note of how many hours of daylight there are Dec. 21, the shortest day of the year.



Try to spot an evergreen Christmas fern.

Scan for **red-tailed hawks** perched along highways. See how many you can spot in one drive.



Take a **walk in the woods** and list all the products that are made from trees.



Subscribe online • mdc.mo.gov/node/9087 • Free to Missouri households



I Am Conservation

Columbia attorney Matt Uhrig and his daughter Cleo, 12, have been hunting ducks and deer together since she was 8. Matt says one reason he wants his children to hunt is to give them an understanding of where their food comes from. Apart from this practical aspect, his favorite part of their hunts is the opportunity for one-on-one time. "We have some of our best conversations waiting for deer or ducks to appear," says Matt. For Cleo, it's more about the hunt itself. "The first time she shot a deer, there was a sense of accomplishment that you only see once in a while in a kid," says her dad. "You could tell she was very proud of herself." Deer hunting was part of Matt's childhood experience, but he knew little about waterfowl hunting until friends invited him to hunt with them a few years ago. Now it's something he and Cleo both eagerly anticipate. —*photo by Noppadol Paothong*